

IN THE CLAIMS:

Please amend Claims 1, 5, 8, 9, and 15 as follows.

1. (Currently Amended) ~~A~~ ~~In a~~ method of patterning a layer of photoresist which has been applied over a photomask substrate, comprising:

~~and exposed to~~ exposing a surface of said photoresist to pattern imaging radiation ;
~~and , the improvement comprising exposing said imaged photoresist to~~

prior to development of said photoresist to form a pattern, applying a vacuum to said surface of said photoresist for a period of time sufficient to allow pattern imaged critical dimensions to equilibrate across said photoresist, wherein said vacuum at a process chamber pressure ranging applied to said surface of said photoresist ranges from about 5×10^{-6} mTorr to about 5 mTorr , whereby an improvement in critical dimension and uniformity in a subsequently developed photoresist pattern is obtained.

2. (Original) A method in accordance with Claim 1, wherein exposure of said imaged photoresist to said vacuum is performed at a substrate temperature within the range of about 18°C to about 60°C, for a period of time within the range of about 10 minutes to about 70 hours.

3. (Original) A method in accordance with Claim 2, wherein exposure of said imaged photoresist to said vacuum is performed at a substrate temperature within the range of about 18°C to about 40°C, for a period of time within the range of about 20 minutes to about 12 hours.

4. (Original) A method in accordance with Claim 1, wherein said radiation is e-beam radiation.
5. (Currently Amended) A method in accordance with Claim 1, wherein said imaging radiation is optical radiation.
6. (Original) A method in accordance with Claim 1, wherein exposure of said imaged photoresist to said vacuum is performed prior to the performance of a post-exposure bake process.
7. (Original) A method in accordance with Claim 1, wherein said exposure of said imaged photoresist to said vacuum is performed prior to development of said photoresist to create a pattern having openings through said photoresist layer thickness.
8. (Currently Amended) ~~In a~~ A method of patterning a layer of photoresist which has been applied over a photomask substrate, comprising: exposing said photoresist to imaging radiation [,] ; and-developed developing said photoresist to create a developed photoresist pattern having openings through said photoresist layer thickness ; and , ~~the improvement comprising~~ exposing said developed photoresist to a vacuum at a substrate temperature within the range of about 20°C to about 60°C for a period of time within the range of about 10 minutes to about 60 minutes, at a process chamber pressure ranging from about 5×10^{-6} mTorr to about 5 mTorr, whereby an improvement in line edge roughness of pattern openings of said developed photoresist is obtained.
9. (Currently Amended) A method of patterning a layer of photoresist which has been applied over a photomask substrate, comprising:

- a) post-apply baking said photoresist;
- b) exposing said photoresist to imaging radiation, whereby a pattern imaged photoresist is created ;
- c) exposing said pattern imaged photoresist to a vacuum for a period of time sufficient to allow pattern imaged critical dimensions to equilibrate across said photoresist, at a process chamber pressure ranging from about 5×10^{-6} mTorr to about 5 mTorr;
- d) post-exposure baking said imaged photoresist; and
- e) developing said imaged photoresist to create a pattern having openings through said photoresist layer thickness.

10. (Original) A method in accordance with Claim 9, wherein exposure of said imaged photoresist to said vacuum is performed at a substrate temperature within the range of about 18°C to about 60°C, for a period of time within the range of about 10 minutes to about 70 hours.

11. (Original) A method in accordance with Claim 10, wherein exposure of said imaged photoresist to said vacuum is performed at a substrate temperature within the range of about 18°C to about 40°C, for a period of time within the range of about 20 minutes to about 12 hours.

12. (Original) A method in accordance with Claim 9, wherein said radiation is e-beam radiation.

13. (Original) A method in accordance with Claim 9, wherein said radiation is optical radiation.

14. (Original) A method in accordance with Claim 9, wherein said method further includes the following step:

f) exposing said developed photoresist to a vacuum at a substrate temperature within the range of about 20°C to about 60°C for a period of time within the range of about 10 minutes to about 60 minutes, at a process chamber pressure ranging from about 5×10^{-6} mTorr to about 5 mTorr.

15. (Currently Amended) A method of patterning a layer of photoresist which has been applied over a photomask substrate, comprising:

- a) post-apply baking said photoresist;
- b) exposing said photoresist to imaging radiation , whereby a pattern imaged photoresist is created ;
- c) post-exposure baking said pattern imaged photoresist;
- d) developing said pattern imaged photoresist to create a pattern having openings through said photoresist layer thickness; and
- e) exposing said developed photoresist to a vacuum at a substrate temperature within the range of about 20°C to about 60°C for a period of time within the range of about 10 minutes to about 60 minutes, at a process chamber pressure ranging from about 5×10^{-6} mTorr to about 5 mTorr , whereby an improvement in line edge roughness of pattern openings of said developed photoresist is obtained .

16. (Original) A method in accordance with Claim 15, wherein said imaging radiation is e-beam radiation.

17. (Original) A method in accordance with Claim 15, wherein said imaging radiation is optical radiation.